

What is claimed is:

1. A tool for versioning and configuration management of object models in a computing system comprising:

5 a component container for grouping objects to form a component containing the objects, the objects having properties and associations; and,

a configuration container for grouping the assembled components to form a configuration;

10 characterized in that each component is assigned a version number upon creation whereupon subsequent versions, if any, of the component are derived directly or indirectly from an earlier version, the objects accessibly isolated within the assigned component versions except for inter-component associations established between compatible ones of the objects in separate but compatible components of the configuration, the associations forming the basis for assembling, managing and function of the configuration.

15 2. The tool of claim 1 wherein object properties include intra-component associations between objects within a same component.

20 3. The tool of claim 1 wherein object ownership attributes of the inter-component associations define dependency relationships between the component versions.

25 4. The tool of claim 1 wherein object evolution includes object modification within a component version, object introduction to a component version, and object deletion from a component version.

5. The tool of claim 1 wherein a configuration can include one or more sub-
configurations with the constraint that any shared component among them is of
the same version.
- 5 6. The tool of claim 1 wherein evolution history of component versioning and
subsequent configuration versioning is recorded and rendered accessible for
review.
- 10 7. The tool of claim 1 wherein compatibility between objects and component
versions is automatically recognized through association identification.
8. The tool of claim 1 wherein incompatibility between component versions
within a configuration is automatically recognized and reported during assembly.
- 15 9. A method for assembling a complete system of interacting components using a
tool, the tool including a container for component assembly and a container for
configuration assembly comprising steps of:
 - (a) grouping desired objects into the component container;
 - (b) forming a component from the objects and versioning the component;
 - 20 (c) repeating steps (a) and (b) for all of the desired components to be
included in the configuration;
 - (d) grouping the assembled components into a configuration container;
and
 - (e) forming a configuration containing the component versions.
- 25 10. The method of claim 9 wherein in step (b) the component is versioned as a
first created component.

11. The method of claim 9 wherein in step (b) the component is versioned as a derivative of an older version.
12. The method of claim 9 wherein in step (b) the component assembly is tool-assisted using the associations between objects in the component.
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13. The method of claim 9 wherein in step (b) the version assigned to the component is recorded in a component version evolution history.
- 10 14. The method of claim 9 wherein in step (d) compatibility between component versions is automatically recognized through association identification.
15. The method of claim 9 wherein in step (e) ownership attributes of the inter-component associations define dependency relationships between the component versions of the configuration.
16. The method of claim 9 wherein in step (e) the configuration can include one or more sub-configurations with the constraint that any shared component among them is of the same version.
- 20 17. The method of claim 9 wherein in step (e) the configuration assembly is tool-assisted using the associations between the included component versions.
- 25 18. The method of claim 9 wherein in step (e) incompatibilities between component versions within a configuration are automatically recognized and reported during assembly.